

First intention continuous veno-venous hemodiafiltration in young children with hemolytic and uremic syndrome.

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Objectives

Hemolytic and uremic syndrome (HUS) can lead to acute kidney injury requiring renal replacement therapy. Usual recommendations favour peritoneal dialysis (PD) in first intention for young children (without contra indication). We report a series of young patients with HUS treated with continuous veno-venous hemodiafiltration (CVVHDF) in first intention despite the lack of contra indications for PD.

Methods

This is a prospective study of consecutive cases of young children with typical HUS treated with CVVHDF in first intention in a single paediatric intensive care unit (PICU) in 2011.

Results

Five children aged 66, 24, 18, 17 and 13 months and weighing 23.0, 9.7, 11.9, 11.8 and 9.2 kg, respectively, were included. Vascular access was in the right internal jugular vein in 4 and in the right sub-clavian vein in 1 patient. Catheters used were double-lumen 8.5 Fr diameter. Anticoagulation was achieved with heparin. CVVHDF durations were 8, 3, 6, 2 and 5 days. No hemodynamic or technical issue occurred during the CVVHDF courses. Normalisation of electrolyte balance was reached within the first 24 hours of CVVHDF. Four children received red cells transfusion and 1 received platelets transfusion. Patients were discharged after 10, 4, 7, 5, 7 days in PICU. One patient was readmitted for plasma exchange therapy. One patient had 4 courses of intermittent hemodialysis after PICU discharge.

Patient	Age (months)	Weight (kg)	CVVHDF duration (days)	PICU length of stay (days)
1	66	23	8	10
2	24	9.7	3	4
3	18	11.9	6	7
4	17	11.8	2	5
5	13	9.2	5	7

Conclusions

Recent technological progress has made CVVHDF safer and more reliable in young children. It allows a tighter control of fluid and electrolyte balances in the first hours of treatment without hemodynamic impairment. Vascular access can be used for intermittent dialysis and/or plasma exchange therapy.

Even in the absence of contra indication for PD, first intention CVVHDF for young children with HUS is feasible and showed no major safety issue in this small case series.